PTN Electronics

PS121 Presentation Switcher

User Manual

Learning Function

Auto-Switch

PTN ELECTRONICS

PS Series --- Presentation Switcher

Please read this manual carefully before using this product.

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Attention：

This is a manual for Presentation switcher PS121.

This manual is only an instruction for operators, not for any maintenance usage. The functions described in this version are updated till Jan 2010. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

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All product function is valid till 2010-1-1

⚠ Operation Notice

In order to ensure the credibility use of the product and the user's safety, please comply with the following items during installation and maintenance:

①

The system must be earthed properly. Please do not use two blades plugs and ensure the alternating power supply ranged from 100v to 240v and from 50Hz to 60Hz.

②

Do not put the machine in a place of too hot or too cold.

③

To avoid any damage by over heat, please keep the working environment good in ventilation to radiate the heat when running the machine.

④

The machine should be turned off when in rainy and humid days or nonuse for a long time.

⑤

The AC power supply line should be disconnected with the power socket during the following operation.

A. Take out or reinstall any component of the machine.
B. Disconnect or re-connect any connector of the machine.

⑥

Please do not attempt to maintain and uncover the machine for there is a high-voltage component inside and the risk of the electric shock.

⑦

Do not splash any chemical product or liquid on or near the equipment.

1. Function

PTN PS121 switcher is the multi-format input unit special for the presentation usage, built in the RS232/RS485 controller. It is the economical and high level solution for the audiovisual system..

- It has three parts DVI 4x1 selection switcher, VGA 4x1 selection switcher, C-Video 4x1 selection switcher, separately working.
- Video:
  a) The DVI signal input is compatible with DVI1.0 and HDMI 1.3 video, i.e.340 MHz (10.2 Gbit/s). It supports the HDCP, EDID, DDC.
  b) The VGA signal input supports the super bandwidth, up to 750MHz(-3dB). Supporting HDTV.
  c) The Composite video signal input is compatible with NTSC 3.58, NTSC 4.42, PAL, and SECAM
  d) Video resolution adjustable, ranging from 800*600@60Hz to 1280*1024@60Hz (4:3 display), 480p to 720p (16:9 display), Maximum resolution 1920*1200.
- Audio:
  a) Three following Audio parts, 4*1 DVI, 4*1 VGA, 4*1 C-video, stereo balanced/unbalanced on capture screw connector, supports Volume input adjustable and preset.
  b) One program audio output (Line audio), break away, supports volume output adjustable separately, preset, and volume output adjustable mixed with MIC, preset
  c) One MIC input. Support volume output adjustable
- Auto-control and Learning function:.
  a) The PS121 will automatically send out the RS232/RS485 command by the RS232/RS485 port to the third-party device, for controlling the display device, including input source changing, and others.
  b) The PS121 can infinitely learn the new RS232 series command of your display device.

- Control :
  a) RS-232 serial control port. Public command, working with the third-party device.
  b) RS-232/RS-485 output, programable output. The user can customize the RS-232/RS-485 commands, controlling the displaying equipments.
  c) IR remote control .Default IR remote to control the full function of selection switcher
- Rack-mountable aluminum enclosure, 1 U height.
- Internal international power supplies (100Volt~240Volt AC, 50/60Hz) for worldwide compatibility, all models are equipped with an internal, auto-switching power supply that meets or exceeds all appropriate safety certifications.

2. Front Panel

1) DVI signal selection zone:
You can select any one channel of the 4 DVI signal channels by pressing the button marked by the corresponding NO 1.2.3.4. Status showed by the LED indicating light.

2) Composite video selection zone:
You can select any one channel of the 4 Composite Video signal channels by pressing the button marked by the corresponding NO 1.2.3.4. Status showed by the LED indicating light.

3) VGA signal selection zone:
You can select any one channel of the 4 VGA signal channels by pressing the button marked by the corresponding NO 1.2.3.4. Status showed by the LED indicating light.

4) Volume selection and adjust zone: Including one volume selection button and one knob.
"Volume selection button":
   a) Alternatively switch between Line Audio and MIC Audio. Status showed by the LED indicating light.
   b) Press the "Volume Selection" button for 3 seconds. When the LED of line audio flickers, it enters into the input audio volume adjustment status. At this time, input volume can be adjusted by the knob. Single-Press the button again to return.

"volume knob":

a) Adjust the volume, with bar indicator on the screen.

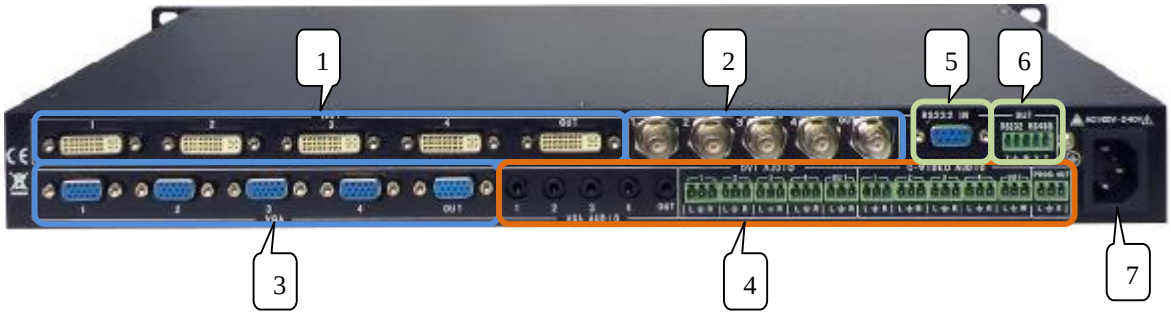
b) Press the surface of knob to mute the audio.

5) Power status LED indicator

6) MIC Mono audio input connector

7) IR sensor

3. Real Panel



1) DVI signal connectors zone: 4 inputs * 1 output

2) Composite video signal connectors zone: 4 inputs * 1 output

3) VGA video connectors zone: 4 inputs * 1 output

4) Three parts of following audio connector zone: (Left to right order: VGA audio, DVI audio, Composite audio, prog audio)
VGA audio connector: 3.5mm mini jack connector for VGA, 4 inputs * 1 output
DVI audio connector: Balance/unbalance Stereo audio on capture screw connector, 4 inputs * 1 output
Composite video following audio connector: Balance/unbalance Stereo audio on capture screw connector, 4 inputs * 1 output
Prog audio: Line audio, break away, can mixed with any one of the following audio and the MIC audio, adjust by Volume selection and adjust front button.

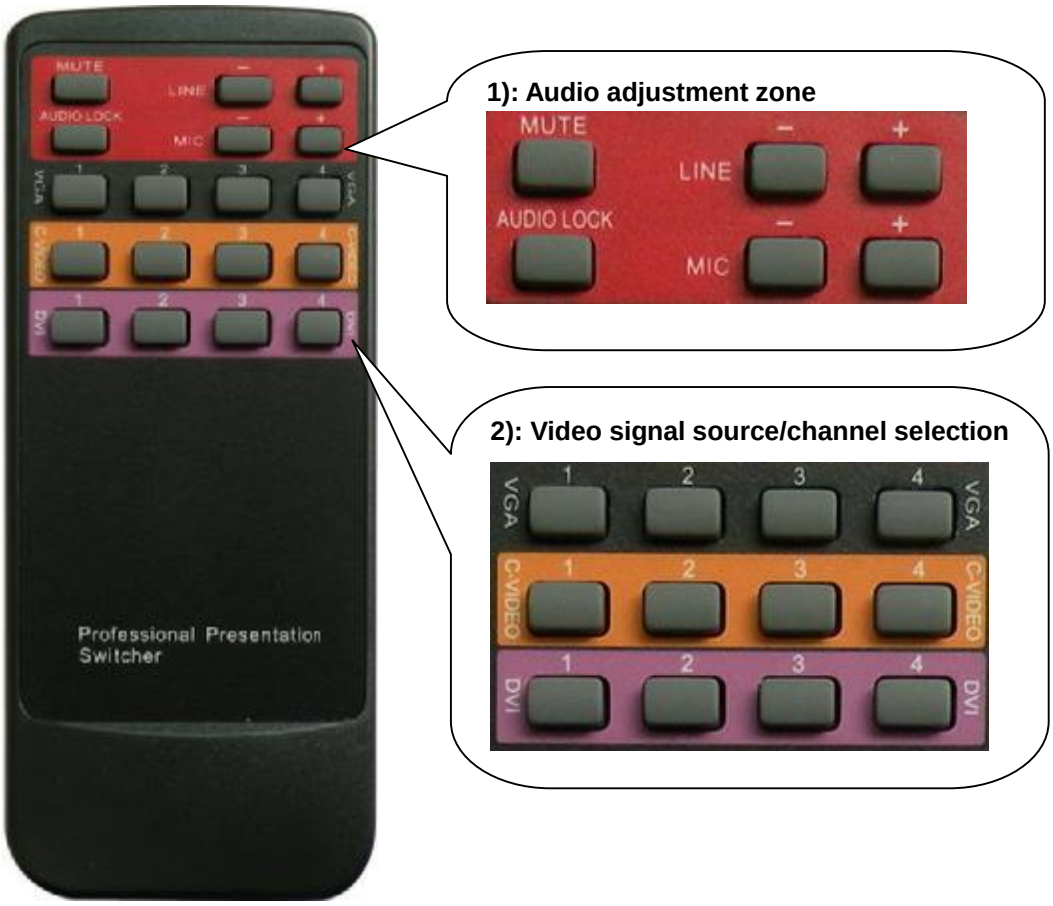
5) RS 232 input: connect to the control device, (see below the "RS232 protocol")

6) RS 232 & RS485 output: connect to the display device (like projector, LCD displayer, LED displayer etc.). When you switch PS121, it will send the presupposed RS232 or RS485 command series. (see below the "RS232 protocol")

7) Power supply

4. Control

Part A: Remote operation



1) Audio volume adjustment zone:
"Mute": mute the displaying audio signal.
"Audio Lock": keep the last-selected audio display; it will not change with the new switch operation.
"Line audio Button – and + ": adjust the volume of line audio, with bar indicator on the screen.

2) Video signal source/channel selection zone:
Video signal selection: press any button of the 4 to change to the corresponding signal change and display, with signal indicating lag on the screen and the LED indicator on the front panel.
VGA signal channel selection: 4 channels corresponding to 4 VGA inputs source.
Composite video signal channel selection: 4 channels corresponding to 4 composite video inputs source.
DVI signal channel selection: 4 channels corresponding to 4 DVI signal inputs source.

Part B: PC or RS232 control

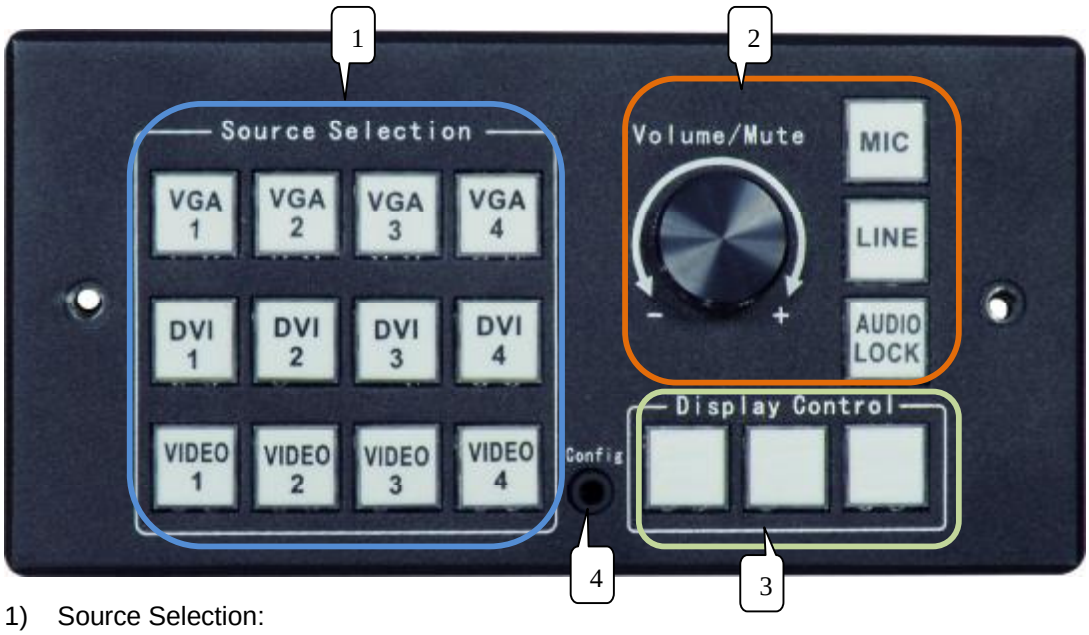
RS-232 Protocol

	Baud: 9600bps 8,n,1 format: no ASCII	
Series	**Function**	**Feedback code**
600%	**Mute**	**Mute ON /Mute OFF**
601%	**Master volume +**	**VGA 1 Volume : XX (0~60)**
0602%	**Master volume -**	**VGA 1 Volume : XX (0~60)**
603%	**MIC volume +**	**MicVolume : XX (0~60)**
0604%	**MIC volume -**	**MicVolume : XX (0~60)**
LOCK%	**Keyboard Lock**	**System Locked!/System Unlock!**
01XX%	**Set Line volume to 'XX' 0~60**	**Line out Volume : XX (0~60)**
02XX%	**Set MIC volume to 'XX' 0~60**	**MicVolume : XX (0~60)**
0700%	**Check Series:** **Current video source,** **Switching series,** **Last video source status,** **Band rate**	**Source: VGA 1** **232/485 DVI data:** **232/485 AV data:** **232/485 VGA data:** **232/485 Current data:** **Baud rate: 9600**
0701%	**Switch to DVI 1 input**	**Source: DVI 1**
0702%	**Switch to DVI 2 input**	**Source: DVI 2**
0703%	**Switch to DVI 3 input**	**Source: DVI 3**
0704%	**Switch to DVI 4 input**	**Source: DVI 4**
0709%	**Switch to VGA 1 input**	**Source: VGA 1**
0710%	**Switch to VGA 2 input**	**Source: VGA 2**
0711%	**Switch to VGA 3 input**	**Source: VGA 3**
0712%	**Switch to VGA 4 input**	**Source: VGA 4**
0705%	**Switch to C-video 1 input**	**Source: CVIDEO 1**
0706%	**Switch to C-video 2 input**	**Source: CVIDEO 2**
0707%	**Switch to C-video 3 input**	**Source: CVIDEO 3**
0708%	**Switch to C-video 4 input**	**Source: CVIDEO 4**
0747%	**Lock audio**	**LOCK VOICE OUT**
0748%	**Unlock audio input** **(follow the video switch)**	**UNLOCK VOICE OUT**

0800%	Check the volume	DVI 1 Volume: XX (0~60) DVI 2 Volume: XX (0~60) DVI 3 Volume: XX (0~60) DVI 4 Volume: XX (0~60) AV 1 Volume: XX (0~60) AV 2 Volume: XX (0~60) AV 3 Volume: XX (0~60) AV 4 Volume: XX (0~60) VGA 1 Volume: XX (0~60) VGA 2 Volume: XX (0~60) VGA 3 Volume: XX (0~60) VGA 4 Volume: XX (0~60) MicVolume: XX (0~60)
0801%	Set band rate to 4800 bps	Baud rate: 4800
0802%	Set band rate to 9600 bps	Baud rate: 9600
0803%	Set band rate to 19200 bps	Baud rate: 19200
0804%	Set band rate to 38400 bps	Baud rate: 38400
0805%	Set band rate to 57600 bps	Baud rate: 57600
0806%	Set band rate to 115200 bps	Baud rate: 115200
/+1xxxx;	Following the DVI switch, RS232/RS485 Series command: XXXXXXX	232/485 DVI data: XXXXXXX
/+2xxxx;	Following the AV switch, RS232/RS485 Series command: XXXXXXX	232/485 AV data: XXXXXXX
/+3xxxx;	Following the VGA switch, RS232/RS485 Series command: XXXXXXX	232/485 VGA data: XXXXXXX
/+0xxxx;	Direct output series by RS232/RS485 output: XXXXXXX	232/485 Direct out data: XXXXXXX
0900%	Change all volume input mode	Change to output vol control/Change to input vol control
31XX%	Set DVI 1 volume to XX	DVI 1 Volume : XX 0~60
32XX%	Set DVI 2 volume to XX	DVI 2 Volume : XX 0~60
33XX%	Set DVI 3 volume to XX	DVI 3 Volume : XX 0~60
34XX%	Set DVI 4 volume to XX	DVI 4 Volume : XX 0~60
41XX%	Set AV 1 volume to XX	AV 1 Volume : XX 0~60
42XX%	Set AV 2 volume to XX	AV 2 Volume : XX 0~60
43XX%	Set AV 3 volume to XX	AV 3 Volume : XX 0~60
44XX%	Set AV 4 volume to XX	AV 4 Volume : XX 0~60
51XX%	Set VGA 1 volume to XX	VGA 1 Volume : XX 0~60
52XX%	Set VGA 2 volume to XX	VGA 2 Volume : XX 0~60
53XX%	Set VGA 3 volume to XX	VGA 3 Volume : XX 0~60
54XX%	Set VGA 4 volume to XX	VGA 4 Volume : XX 0~60

Part c: WP18R control

PS121 working with WP18R



1) Source Selection:
   VGA signal channel selection: 4 channels corresponding to 4 VGA inputs source.
   Composite video signal channel selection: 4 channels corresponding to 4 composite video inputs source.
   DVI signal channel selection: 4 channels corresponding to 4 DVI signal inputs source.

2) Volume selection and adjust zone: Including three volume function buttosn and one knob.
   “MIC button”: alternatively choose the MIC video between Line Audio and MIC Audio.
   “Line button”: alternatively choose the LINE video between Line Audio and MIC Audio.
   “Audio lock button”: keep the last-selected audio display; it will not change with the new switch operation.
   “Volume knob”:
   a) Adjust the volume, with bar indicator on the screen.
   b) Press the surface of knob to mute the audio.

3) Display control: (three extension buttons): programmable button controlled by RS232, can be customized for any other function of the controlled deviece by RS232 pre-setting.

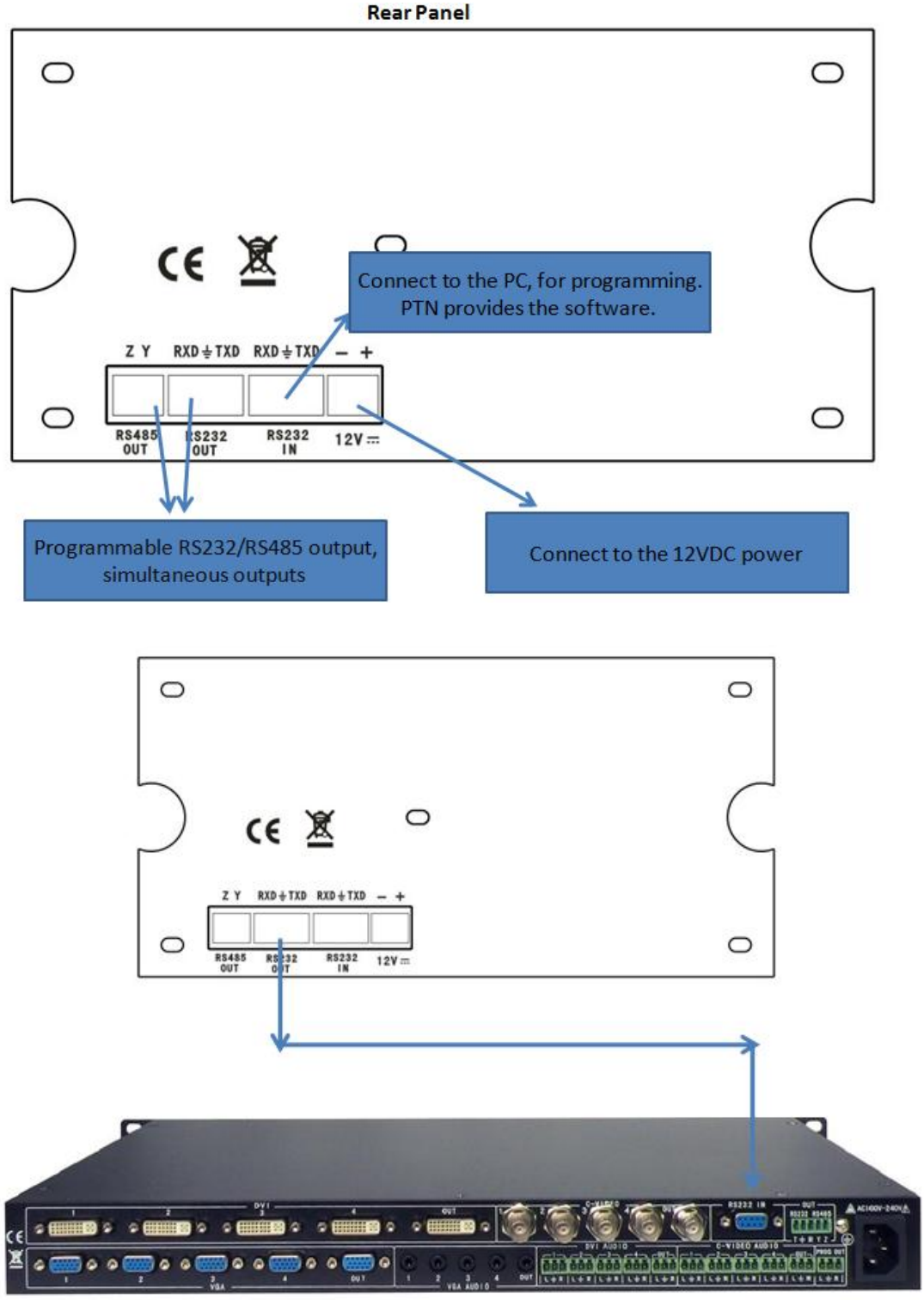
4) Config input: for 3.5mm mini jack connector.
   Connected by one cable (one end is RS232 connector male, the other end is 3.5mm mini jack male) to PC for customizing the programmable WP18R buttons and knob. (For the detail, please check the WP18R user manual)

5. Specification

Video input		**Video output**	
input	4 DVI 1.0 standard (T.M.D.S signal) 4 Computer Graphics picture 4 Composite video	output	1 DVI-I (DB 24+5),female 1 Computer Graphics picture 1 Composite video
input connector	DVI-I (DB 24+5),female VGA (15 pin HD),female BNC male connector	output connector	DVI-I (DB 24+5),female VGA (15 pin HD),female BNC male connector
Video Signal	Dual link (DVI-D), HDMI 1.3; RGBHV, RGBs, RGsB, RsGsBs; NTSC 3.58, NTSC 4.42,PAL, SECAM	Video Signal	Dual link (DVI-D) ,HDMI 1.3; RGBHV, RGBs, RGsB, RsGsBs; NTSC 3.58, NTSC 4.42,PAL, SECAM
Video general			
Resolution Range	1920 *1200 @60Hz (Max.of DVI switcher); 3200 *2400 @60Hz(Max.of VGAswitcher)	Bandwidth	HDMI:340 MHz (10.2 Gbit/s); VGA :750MHz (-3dB); Composite vedio :150MHz
Maximum Pixel Clock	165MHz	Switching Type	Vertical interval
Switching Speed	200ns (Max.)	Vedio Impedance	75Ω
VGA Cross Talk	-50dB@5MHz	Inout/Output Level	0.5V~2.0Vp-p
Gain	0dB		
EDID and DDC	Supports Extended Display Identification Data (EDID) and Display Data Channel (DDC) data using DVI and HDMI standards,EDID and DDC signals are actively bufferred		
HDCP	Compliant with High -bandwidth Digital Content Protection (HDCP) using DVI and HDMI 1.3 standards		
Consumer Electronics Control (CEC)	Supports CEC wired infrared data pass-through using the HDMI 1.3 standard		

Audio input		**Audio output**	
Input	12 Stereo Audio for line audio 1 Mono Audio for MIC audio	output	4 stereo,balanced/unbalanced line audio; 1 stereo, balanced/unbalanced program audio
input connector	8 Capture screw connector for DVI&Composite video; 4 3.5mm mini jack connector for VGA; 1 6.5mm Mono Audio for MIC audio	output connector	Capture screw connector for line audio; Capture screw connector for progame audio
Audio Input Impedance	>10Ω	Audio Output Impedance	50Ω
Audio general			
Audio Connector	Mini Jacks ;tip (L); ring (R) ; sleeve (GND)	Stereo Channel Separation	>80dB @1KHz
Frequency Response	20Hz~20K Hz	CMRR	>90dB @20Hz to 20K Hz
Control parts			
Control/Remote	RS-232, 9-pin female D connector	Pin Configurations	2 = TX, 3 = RX, 5 = GND
Options	TCP/IP control by PTNET		
General			
Temperature	-20 ~ +70℃	Humidity	10% ~ 90%
Power Supply	110VAC ~ 240VAC, 50/60Hz	Power Consumption	25W
Case Dimension	W482.6 x H43.6 x D242 (1U high ,full rack wide)	Product Weight	2kg

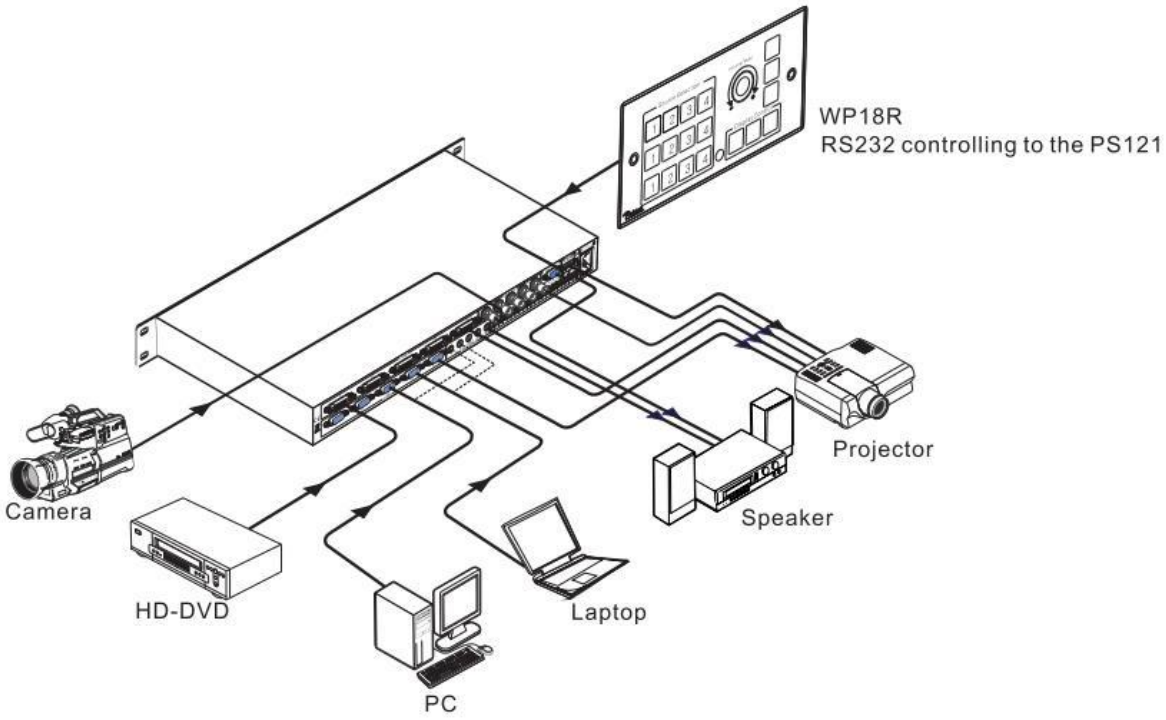
6. Connection of PS121 and WP18R.



7. Optional accessory

WP18R Base Box.

8. Diagram



9. Troubleshooting & Maintenance

1. When images of terminal unit output with ghost, such as the projector output with ghost, please check the projector's setting or try another high quality connection cord.
2. When there is a color losing or no video signal output, please check the input and output end connection of VGA cable.
3. When the remote controller doesn't works:
   A. The battery has no power, please change a new one.
   B. The controller was broken, please repair it.
4. When user cannot control the switcher by computer through its COM port, please check the COM port number in the software and make sure the COM port is in good condition.
5. When switching, there are codes back but no output image, please check with if there is any signal at the input end. If there is no signal input, maybe the input connection cord broken or the connectors loosen.
7. If the POWER indicator doesn't work or no respond to any operation, please make sure the power cord connection is well.
8. If the output image is interfered, please make sure the system is grounded well.
9. If the static becomes stronger when connecting the BNC connectors, it maybe due to the incorrect grounding, please correct it otherwise it would damage the switcher.
10. If the switcher cannot be controlled by the buttons on the front panel, RS232 port or remote controller, the switchers may has broken. Please send it to the dealer for repairing.